

**We Claim:**

1        1. An optical fiber formed by a method which comprises:

2        (a) providing a preform having a glass core, a substantially homogeneous  
3        coating of a light interactive material over said glass core and a glass cladding over  
4        said coating of said light interactive material, with said glasses having an  
5        overlapping flow range and said coating material having a flow point which lies  
6        below the flow range of said glasses with said flow range being in the range of about  
7        600-1500°C; and

8        (b) heating said preform to an elevated temperature and drawing a fiber from  
9        said preform at the flow temperature of said glasses, whereby a fiber is formed  
10       having a substantially continuous film of light interactive material formed between  
11       said core and cladding throughout the entire length of the fiber, whereby said  
12       coating material strongly interacts with light in the core to effect either high  
13       dispersion, absorption saturation, amplification, Faraday rotation or other similar  
14       effects of the said light.

1       2. An optical fiber formed by a method which comprises:

2       (a) providing a preform having a glass core, a substantially homogeneous  
3       coating of a light interactive material over said glass core and a glass cladding over  
4       said coating of said light interactive material, where said light interactive material is  
5       an inorganic material selected from the group consisting of a metal, metal alloy,  
6       ferrite, ceramic, magnetic material and a semiconductor, with said glasses having an  
7       overlapping flow range and said coating material having a flow point which lies  
8       below the flow range of said glasses with said flow range being in the range of about  
9       600-1500°C; and

10       (b) heating said preform to an elevated temperature and drawing a fiber from  
11       said preform at the flow temperature of said glasses, whereby a fiber is formed  
12       having a substantially continuous film of light interactive material formed between  
13       said core and cladding throughout the entire length of the fiber, whereby said  
14       coating material strongly interacts with light in the core to effect either high

- [illegible]